

WHAT IS CLAIMED IS:

1. A gas pressure switch for an ignition and safety system for ammunition, comprising:

a housing;

a piston actuator within the housing, the piston actuator being displaceable from an idle position to a contacting position by propellant gases of the ammunition during use;

at least two contact pins that are attached immovably to the housing;

a contacting device operatively associated with the piston actuator and located on a first side of the piston actuator, the first side being opposite a second side on which the propellant gases act during use, the contacting device connecting electrically to the contact pins when the piston actuator is in the contacting position; and

a locking pin which holds the piston actuator in the idle position until a predetermined gas pressure is reached and which shears off when the predetermined gas pressure is reached, so that the piston actuator can be displaced into the contacting position.

2. The gas pressure switch according to claim 1, wherein the piston actuator is surrounded on its second side by an elastically deformable membrane that is connected to the housing and which pushes against the piston actuator once the predetermined gas pressure is reached and keeps the piston actuator in the contacting position once it reaches the contacting position.

3. The gas pressure switch according to claim 1, wherein the piston actuator and the housing of the gas pressure switch are provided with sealing surfaces which move toward each other when the piston actuator is moved from the idle position to the contacting position.

4. The gas pressure switch according to claim 3, wherein the sealing surfaces of the piston actuator and the housing are cone-shaped.

5. The gas pressure switch according to claim 3, further comprising a ring-shaped damping element of an elastic material arranged between the sealing surfaces of the piston actuator and the housing.

6. The gas pressure switch according to claim 4, wherein the damping element is made of tin or lead.

7. The gas pressure switch according to claim 1, wherein the contacting device comprises a pin-type element which is pushed between the contact pins to electrically connect the contact pins when the piston actuator is pushed from the idle position to the contacting position.

8. The gas pressure switch according to claim 7, wherein the pin-type element of the contacting device is a ceramic insert.

9. The gas pressure switch according to claim 8, wherein the pin-type element has contacting surfaces that are gold-plated.

10. The gas pressure switch according to claim 7, wherein the pin-type element is fixedly connected to the piston actuator.

11. The gas pressure switch according to claim 7, wherein the pin-type element of the contacting device is a metal

actuating pin which is held in place either directly, or with the aid of a pin of electrically non-conducting material, by a holder that is arranged inside the piston actuator.

12. The gas pressure switch according to claim 11, wherein the holder for the actuating pin is glass.

13. The gas pressure switch according to claim 1, wherein the contacting device is an arrangement comprising at least two sleeve-shaped receptacles that are connected electrically to each other, such that each of contact pins is pushed into one of the sleeve-shaped receptacles when the piston actuator is moved from the idle position to the contacting position.

14. The gas pressure switch according to claim 13, wherein the contacting device is a circuit board arrangement.

15. The gas pressure switch according to claim 14, wherein the circuit board arrangement is a separate component that adjoins the piston actuator, and the piston actuator during its displacement via a flat underside of the piston actuator causes a corresponding displacement of the circuit board arrangement.

16. The gas pressure switch according to claim 14, wherein the circuit board arrangement comprises at least four axially adjoining circuit boards including

a first circuit board which faces the contact pins and centers the contact pins;

a second circuit board provided with bores having a diameter smaller than a diameter of the contact pins to prevent the sleeve-shaped receptacles from making contact with the contact pins in the idle position of the piston actuator;

a third circuit board having the sleeve-shaped receptacles; and

a fourth circuit board that rests against the piston actuator and the third circuit board, so as to prevent any movement of the circuit board arrangement while the piston actuator is in the idle position.

17. The gas pressure switch according to claim 1, wherein the contact pins are provided with gold-plated tips at contacting locations that contact the contacting device when the piston actuator is in the contacting position.

18. The gas pressure switch according to claim 1, wherein the contact pins are arranged so as to be insulated inside a carrier that is connected by threads to the housing and is welded to the housing so as to be gas-tight.

19. The gas pressure switch according to claim 1, wherein the gas pressure switch is for screwing into a tail end of the ammunition.